

a p-type semiconductor layer in electrical contact with said active layer; and
a p-electrode in electrical contact with said p-type semiconductor layer, said p-electrode comprising:

at least a layer of silver having a thickness sufficient to reflect greater than 50% of light incident thereon, wherein a portion of said generated light exits said device through said substrate after being reflected from said p-electrode;

a bonding layer in electrical contact with said layer of silver for making electrical connections to said layer of silver; and

a fixation layer overlying at least a portion of said layer of silver.

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E1

2. The light emitting device of Claim 1 wherein said n-type semiconductor layer and said p-type semiconductor layer comprise group III nitride semiconducting materials.

3. The light emitting device of Claim 1 wherein said silver layer is greater than or equal to 20 nm in thickness.

5. The light emitting device of Claim 1 wherein said fixation layer comprises a metal.

6. The light emitting device of Claim 5 wherein said fixation layer comprises a metal chosen from the group consisting of nickel, palladium, gold, aluminum, chromium, titanium, and platinum.

D2
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7. (Amended) The light emitting device of Claim 1 wherein said fixation layer comprises a dielectric.

8. The light emitting device of Claim 7 wherein said fixation layer comprises a compound chosen from the group consisting of TiO_2 and Al_2O_3 .

9. The light emitting device of Claim 1 wherein said bonding layer comprises a metal chosen from the group consisting of gold, nickel, aluminum, and indium.

sub E1

D3

10. The light emitting device of Claim 1 wherein said bonding layer covers less than half of said layer of silver.

11. The light emitting device of Claim 1 wherein said bonding layer is a multi-layered structure.

12. (Amended) The light emitting device of Claim 1 wherein said fixation layer is disposed between said bonding layer and said layer of silver, said fixation layer providing an electrical path between said bonding layer and said layer of silver, said fixation layer serving as a diffusion barrier layer for preventing constituents from said bonding layer from interdiffusing with said layer of silver.

13. (Amended) The light emitting device of Claim 12 wherein said fixation layer comprises a metal.

14. (Amended) The light emitting device of Claim 13 wherein said fixation layer comprises nickel.

15. (Amended) The light emitting device of Claim 12 wherein said fixation layer encapsulates said layer of silver.

16. (Amended) The light emitting device of Claim 12 wherein said fixation layer is a multi-layered structure.

17. The light emitting device of Claim 1 further comprising:
an n-electrode comprising a layer of electrically conducting material in electrical contact with said n-type semiconductor layer; and
a package having first and second conductors thereon electrically connected to said p-electrode and said n-electrode, respectively.

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36. (Twice Amended) A light emitting device comprising:
a substrate;

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an n-type semiconductor layer;
an active layer for generating light, said active layer being in electrical contact with said n-type semiconducting layer;
a p-type semiconductor layer in electrical contact with said active layer; and
a p-electrode in electrical contact with said p-type semiconductor layer, said p-electrode comprising:
at least a substantially transparent layer of silver;
a bonding layer in electrical contact with said layer of silver for making electrical connections to said layer of silver; and
a fixation layer overlying said layer of silver.

Please add the following new claim:

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37. (New) The light emitting device of Claim 7 wherein the bonding layer is disposed on a first portion of the silver and the fixation layer is disposed on a second portion of the silver.

38. (New) A light emitting device comprising:
a stack of semiconductor layers including a light emitting region;
a metal electrode contacting a surface of the stack; and
a barrier overlying the metal electrode for preventing migration of metal from the metal electrode.

39. (New) The light emitting device of Claim 38 wherein the metal electrode comprises silver.

40. (New) The light emitting device of Claim 38 wherein the stack comprises a p-type III-nitride layer and the metal electrode is deposited on the p-type III-nitride layer.

41. (New) The light emitting device of Claim 38 wherein the barrier contacts a surface of the stack.

42. (New) The light emitting device of Claim 38 wherein the barrier surrounds a portion of the metal electrode not covered by the barrier.

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43. (New) The light emitting device of Claim 38 wherein the barrier covers an edge of the metal electrode.
44. (New) The light emitting device of Claim 38 wherein the barrier covers an entire surface of the metal electrode not in contact with the stack.
45. (New) The light emitting device of Claim 38 wherein the barrier comprises a metal.
46. (New) The light emitting device of Claim 38 wherein the barrier comprises nickel.